IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicants	:	David J. Wendell *et al.*		
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Mail Stop No-Fee Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Commissioner:

This paper is being submitted in reply to the January 7, 2009, Office Action and along with a Notice of Appeal.

REMARKS

Claims 1-27 are presently pending. Claims 1, 2, 5, 8-14, 16-20, and 22-27 were rejected under 35 U.S.C. § 103(a) as being obvious over Hossfield (US 5,684,597) in view of Rasmussen (US 5,277,651). Claims 3, 4, 6, 7, 15, and 21 were rejected under 35 U.S.C. § 103(a) as being obvious in over Hossfield in view of Rasmussen and in further view of Panzeri (US 5,277,651).

A. Adding Structure from Rasmussen Into Hossfield Would Render Hossfield's Device Unnecessarily Complex and Expensive

Hossfield discloses a simple and inexpensive coin diameter discriminating device for use in "coin operated devices such as Laundromat equipment, vending machines, toll booths, and public telephones." Hossfield, at 1:8-13; 3:8-14. Hossfield's device receives a single coin at a time through a coin slot into a coin cavity of a disk. Hossfield, at 3:6-18. A motor then begins rotating the disk through a fixed angle, less than a full rotation, at a fixed and uniform rate. 3:25-41; 5:4-7. During this rotation, a sensor measures light from an LED until a time that the leading edge of the coin interrupts the beam; this amount of time is measured. 4:38-54. A similar

measure is made of the coin's trailing edge, here the amount of time from the beginning of rotation until a light sensor is uncovered. 4:55-65. If the coin is accepted, the coin falls through a coin collection slot common to all coin denominations into a collection box. 6:61-7:6.

The claims in question are directed to coin processing systems for use in high-speed, high-volume coin sorting applications, requiring flexibility in the number of coins they can process and the speed at which they can process coins. *See* Specification, ¶ 71 ("rate of about 3400 coins per minute," "disc is rotated at about 350 r.p.m"). The Office Action would add several components of Rasmussen's coin sorter to Hossfield's washing machine coin discriminator to arrive at the claims. A skilled artisan would not do this, as it would needlessly drive up the size, complexity, and cost of Hossfield's device. A large and expensive coin sorting mechanism is not appropriate for washing machines, vending machines, and pay telephones.

1. A Skilled Artisan Would Not Add an Encoder to Hossfield

Claim 1 recites a system to process coins including "an encoder attached to the rotatable disc for producing an encoder pulse for each incremental movement of the rotatable disc." Claims 10, 22, 23 similarly recite an encoder. The Office Action has acknowledged that Hossfield "does not disclose an encoder that produces an encoder pulse for each incremental movement of the rotatable disc . . . ." Office Action at 2. The Office Action states that a person of ordinary skill in the art would combine an encoder from Rasmussen with Hossfield's device "for the purpose of precisely monitoring the angular movement of the rotatable disc . . . ." Office Action at 2-3.

Hossfield, however, teaches away from the use of an encoder. Hossfield relies on a motor that produces a fixed and uniform rate of rotation such that a measurement of a coin can be made purely by measuring the amount of time it takes from the beginning of rotation for a leading edge of a coin to interrupt light from an LED: "As described heretofore, the angular velocity of rotation is very uniform because it is accurately controlled by motor 42 at 0.6° per high frequency pulse from processor 54, so the counts in counters 88a and b also accurately represent the respective angular orientations of disk 22 when the leading and trailing edges of the coin 82a or b arrive at or intersect respective light sensors 52a and b." Hossfield, at 5:13-19. (emphasis added). There is simply no need to precisely monitor the angular movement of the disk in Hossfield. The disk's angular movement is tightly controlled and does not need to be measured in order to determine its rotation. This is especially true since the rotation is "very

uniform" and does not vary – measuring using an encoder would be unnecessary and provide completely redundant information. Importantly, information generated by an encoder would not be used by the Hossfield device, as there is no variability in rotation to track with an encoder.

In response to Applicants' arguments, the Office Action states, without explanation, that "Hossfield teaches accurately controlling the motor and it would have been obvious to modify Hossfield by using an encoder to provide precise monitoring." Office Action at 5. Hossfield does disclose accurately controlling the motor; however, the motor is accurately controlled to produce rotation that is "very uniform." Hossfield, at 5:12-15. An encoder is only useful if the rotation is variable, and thus there is something to monitor. For example, in Rasmussen, an encoder is described in conjunction with a speed reducer and a brake: "The disc is normally driven by a main a-c drive motor M1 which is coupled directly to the coin-carrying disc 13 through a speed reducer 210. To stop the disc 13, a brake B is actuated at the same time the main motor M1 is de-energized. To permit precise monitoring of the angular movement of the disc 13, the outer peripheral surface of the disc carries an encoder . . . ." Rasmussen, at 12: 12-18. In Hossfield, there is nothing to monitor; the rotation is always the same.

Adding an encoder would add to the expense of Hossfield's device and increase its size. Given the device's target application, (e.g., vending machines, washing machines, pay telephones, etc.) a person of ordinary skill in the art would not seek to make the device larger, more complicated, and more expensive, by adding an encoder and additional hardware, logic, software, etc., for interpreting it, especially since an encoder's functionality is completely unnecessary. *See, e.g., In re Ratti*, 270 F.2d 810 (CCPA 1959) ("[i]f a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims prima facie obvious."). Instead, Hossfield's intended applications require simple and inexpensive devices of limited features and size.

2. A Skilled Artisan Would Not Have Added a Diverter to Hossfield

Claim 8 recites "a diverter disposed along the coin path beyond the light source, the diverter being moveable between a first position for permitting coins to proceed to the plurality of exit channels and a second position for diverting coins to a reject region" and claim 10 recites "a plurality of coin exit regions."

The Office Action has also acknowledged that Hossfield "does not disclose . . . a diverter

with positions to plural exit paths." Office Action at 2. The Office Action states, without explanation, that "Hossfiled teaches a machine for identifying coins and it would be obvious to a person of ordinary skill in the art to modify Hossfield by utilizing a diverter and plural exit paths for the purpose of sorting coins . . . ." Office Action at 6 (citing to previous Office Action, ¶ 1, which does not provide further explanation). Hossfield is directed to a device that identifies the denomination of coins in a vending machine, pay telephone, etc. Hossfield, at 3:8-14. The device is not intended to sort coins, nor would there be any motivation to do so, as a person of ordinary skill in the art would seek a simple device of limited function, and limited size, given the target applications specifically recited in Hossfield. Moreover, one would have to add additional structure, such as a plurality of coin bins, to collect the coins diverted to multiple paths. This would add even more size, complexity, and expense. Thus, Hossfield teaches away from adding a diverter and multiple exit paths, and a person of ordinary skill in the art would not seek to combine Rasmussen for this feature.

B. Hossfield Does Not Disclose a Continuously Rotatable Disc or a Disc with a Rate of Rotation that is Adjustable

Claim 1 recites a "continuously rotatable disc" for imparting motion to "a plurality of coins of mixed denominations." Claims 22 and 23 have similarly limitations. Hossfield does not teach or suggest a continuously rotatable disc. Claim 1 also recites that "a rate of rotation is adjustable." Claims 10, 22, and 23 have similar limitations. The Office Action does not contend that Hossfield discloses these limitations or that a person of ordinary skill in the art would seek to combine Hossfield with another reference to remedy these deficiencies. A person of ordinary skill in the art would not do so, as this would require modifying Hossfield with a different, likely more expensive, motor as well as additional equipment to control the rotation. These changes would not be compatible with a simple and inexpensive vending machine coin discriminator.

Instead, the Office Action states that "applicant has not claimed that the rate of rotation is adjusted" and that "the applicant has not recited that the disk is continuously rotating," citing MPEP 2106. Office Action at 5. Presumably, the Office Action is relying on the statement in MPEP 2106 that "[l]anguage that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation." However, both of these limitations limit the claims to particular structure (e.g., a device with a "continuously rotatable disc . . . wherein a rate of rotation is adjustable" in

claim 1), and therefore limit the scope of the claims. Accordingly claims 1, 10, 22, and 23, as well as their dependents, are allowable for these reasons as well.

C. Hossfield Discloses Emitting a Light Beam Orthogonal to the Coin Path, Not Substantially in the Same Plane

Claims 1, 10, 22, and 23 recite that the light beam is emitted or directed in substantially the same plane as the coin path. Hossfield teaches emitting a light beam orthogonal to the coin path. The Office Action states that "The plane of the coin path [in Hossfield] can be considered the plane that contains the light emitters and detectors and therefore the light emitted traverses the path in the same plane as the coin path." Office Action at 5-6.

The "path" taken by a coin in Hossfield's device is clearly orthogonal to the light beam: "That is, coin 82a or b has a fixed relationship with respect to disk 22 during the portion of time when diameter is being discriminated and the velocity of coin 82a or b is accurately controlled along a ***predetermined arcuate path from the orientation of FIG. 5 to the orientation of FIG. 7. The path passes light sensors 52a and b.***" Hossfield, at 8:32-37. The coin travels in a first plane. The light beam travels in a ***different*** plane, namely one that is orthogonal to the plane in which the coin travels. The claims require that the light beam be emitted or directed in substantially the ***same*** plane. Hossfield does not disclose this limitation of the claims.

D. Conclusion

The Applicants believe that the claims are in a condition for allowance and action toward that end is earnestly solicited. No fees are believed due in connection with this amendment. However, the Commissioner is authorized to charge any fees which may be required in connection with this application (excluding the issue fee), or credit any overpayment to Deposit Account No. 50-4181, Order No. 247171-000426USP1.

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Respectfully submitted,
/David C. McKone, Reg. No. 52,014/
David C. McKone
Reg. No. 52,014
Nixon Peabody LLP
161 North Clark Street, 48th Floor
Chicago, Illinois 60601-3213
(312) 425-3900 – telephone
(312) 425-3909 – facsimile

Attorneys for Applicants